

Amendments to the Claims:

This listing of claims replaces all prior versions, and listings, of claims in the application:

1. (CURRENTLY AMENDED) A method for determining the frequency of current ripples contained in the armature current signal of a commutated direct current (DC) motor, the method comprising:

determining a frequency spectral result of the armature current signal of the motor in which the armature current signal contains current ripples and interference;

determining a frequency spectral result of an electric operating parameter a voltage signal of the motor in which the voltage signal contains the interference;

determining a frequency spectral result of the current ripples contained in the armature current signal based on differences between the frequency spectral result of the armature current signal and the frequency spectra spectral result of the motor electric operating parameter voltage signal such that the determined frequency spectral result of the current ripples contained in the armature current signal is void of frequency components which are superimposed on the armature current signal as the interference; and

determining the current ripple frequency of the current ripples contained in the armature current signal from the determined frequency spectral result of the current ripples contained in the armature current signal.

2. (ORIGINAL) The method of claim 1 wherein the armature current signal is an analog armature current signal, the method further comprising:

digitizing the analog armature current signal;

wherein determining the frequency spectral result of the armature current signal includes determining the frequency spectral result of the digitized armature current signal.

3. (CURRENTLY AMENDED) The method of claim 1 wherein:

determining the frequency spectral results of the armature current signal and the motor electric operating parameter voltage signal includes using a fast Fourier transform on

the armature current signal and the motor ~~electric operating parameter~~ voltage signal to determine the frequency spectral results of the armature current signal and the motor ~~electric operating parameter~~ voltage signal.

4-5. (CANCELLED)

6. (ORIGINAL) The method of claim 1 wherein:

the current ripple frequency is determined during a start-up phase of the motor.

7. (ORIGINAL) The method of claim 1 further comprising:

determining rotational speed of a drive shaft of the motor based on the current ripple frequency; and

determining rotational position of the drive shaft based on the rotational speed of the drive shaft.

8. (CANCELLED)

9. (ORIGINAL) The method of claim 7 further comprising:

monitoring the current ripple frequency for changes during the operation of the motor.

10. (ORIGINAL) The method of claim 9 further comprising:

counting the current ripples contained in the armature current signal; and

modifying the number of counted current ripples as a function of a change in the current ripple frequency during the operation of the motor.

11. (CURRENTLY AMENDED) A method for determining the frequency of current ripples contained in the armature current signal of a commutated direct current (DC) motor, the method comprising:

determining a frequency spectral result of the armature current signal of the motor in which the armature current signal contains current ripples and interference;

determining a frequency spectral result of an electric operating parameter a voltage signal of the motor in which the motor voltage signal contains the interference;

determining a frequency spectral result of the current ripples contained in the armature current signal based on differences between the frequency spectral result of the armature current signal and the frequency spectra spectral result of the motor electric operating parameter voltage signal such that the determined frequency spectral result of the current ripples contained in the armature current signal is void of frequency components which are superimposed on the armature current signal as the interference without filtering any of the frequency spectral results of the armature current signal and the motor electric operating parameter voltage signal; and

determining the current ripple frequency of the current ripples contained in the armature current signal from the determined frequency spectral result of the current ripples contained in the armature current signal.

12. (PREVIOUSLY PRESENTED) The method of claim 11 wherein the armature current signal is an analog armature current signal, the method further comprising:

digitizing the analog armature current signal;

wherein determining the frequency spectral result of the armature current signal includes determining the frequency spectral result of the digitized armature current signal.

13. (CURRENTLY AMENDED) The method of claim 11 wherein:

determining the frequency spectral results of the armature current signal and the motor electric operating parameter voltage signal includes using a fast Fourier transform on the armature current signal and the motor electric operating parameter voltage signal to determine the frequency spectral results of the armature current signal and the motor electric operating parameter voltage signal.

14-15. (CANCELLED)

16. (PREVIOUSLY PRESENTED) The method of claim 11 wherein:
the current ripple frequency is determined during a start-up phase of the motor.

17. (PREVIOUSLY PRESENTED) The method of claim 11 further comprising:

determining rotational speed of a drive shaft of the motor based on the current ripple frequency; and

determining rotational position of the drive shaft based on the rotational speed of the drive shaft.

18. (PREVIOUSLY PRESENTED) The method of claim 17 further comprising:

monitoring the current ripple frequency for changes during the operation of the motor.

19. (PREVIOUSLY PRESENTED) The method of claim 18 further comprising:

counting the current ripples contained in the armature current signal; and

modifying the number of counted current ripples as a function of a change in the current ripple frequency during the operation of the motor.

20. (NEW) A method for determining the frequency of current ripples contained in the armature current signal of a commutated direct current (DC) motor, the method comprising:

determining a frequency spectral result of the armature current signal of the motor during a first operating stage of the motor;

determining a frequency spectral result of the armature current signal of the motor during a second operating stage of the motor, wherein the first and second operating stages of the motor are different from one another such that the motor has different rotational speeds in the first and second operating stages;

determining a frequency spectral result of the current ripples contained in the armature current signal based on differences between the frequency spectral result of the armature current signal during the first operating stage of the motor and the frequency spectral result of the armature current signal during the second operating stage of the motor such that the determined frequency spectral result of the current ripples contained in the armature current signal is void of frequency components which are superimposed on the armature current signal as interference; and

determining the frequency of the current ripples contained in the armature current signal from the determined frequency spectral result of the current ripples contained in the armature current signal.